



New species and new collection records of aquatic beetles in the genus *Ochthebius* Leach from southern Africa (Coleoptera: Hydraenidae)

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Abstract

The southern African species of the water beetle genus *Ochthebius* Leach, 1815, are reviewed. Eight new species are described, and new collection records are given for eight previously described species, based on the examination and databasing of 8,919 specimens from 253 localities/events. Male genitalia of the new species are illustrated, and high resolution habitus images of the holotypes of new species are provided. Distribution maps are given for the 18 species of *Ochthebius* now known from southern Africa, including Namibia, South Africa, Lesotho, Zimbabwe, the extreme southern part of Angola, and the southern part of Mozambique. New species of *Ochthebius* are: *O. anchorus* (South Africa, KwaZulu-Natal Province, Oribi Gorge); *O. bicomicus* (South Africa, Western Cape Province, 22 mi. N. Nelspoort); *O. bupunctus* (Namibia, Kaokoveld, Kunene River, Swartbooisdrift); *O. endroedyi* (South Africa, North West Province, Barberspan); *O. granulinus* (South Africa, Western Cape Province, Elandsdrift); *O. involatus* (South Africa, Western Cape Province, near Kommetje); *O. sitiensis* (Namibia, Okau Fountain, 12.5 km inland); and *O. zulu* (South Africa, KwaZulu-Natal Province, Nqutu).

Key words: Coleoptera, Hydraenidae, *Ochthebius* Leach, new species, southern Africa, aquatic insects, aquatic microhabitats, holotype digital images

Introduction

This is the ninth contribution in a series of papers revising afrotropical Hydraenidae. Previous papers have included a general taxonomic work on the fauna of southern Africa (Perkins & Balfour-Browne 1994), a comprehensive morphological and systematic study of the family, including African taxa (Perkins 1997), revisionary studies of the genera *Pneuminion* Perkins (Perkins 2004a), *Nucleotops* Perkins & Balfour-Browne (Perkins 2004b), *Discozantaena* Perkins & Balfour-Browne (Perkins 2005a), *Coelometopon* Janssens (Perkins 2005b), a paper describing new species of, and documenting new collecting records for, Prosthetopinae (Perkins 2008), and a comprehensive revision of the tribe Parhydraenini (Perkins 2009). The remaining revisions of *Aulacochthebius* Kuwert, *Limnebius* Leach, and *Hydraena* Kugelann are nearing completion. About 45,600 specimens have been identified and databased, from 1,281 localities/events, representing about 210 hydraenid species. Revisions include digital images of primary types.

In this paper, eight new species of *Ochthebius* Leach, 1815, from southern Africa are described, and new collection records are given for eight previously described species. Distribution maps are provided for the 18 species of *Ochthebius* now known from southern Africa. The geographical area includes Namibia, South Africa, Lesotho, Zimbabwe, the extreme southern part of Angola, and the southern part of Mozambique (Fig. 17). In total, 8,919 specimens have been identified and databased, from 253 localities/events.

Distributions and microhabitats

Members of *Ochthebius*, in southern Africa, are generally found at the margins of saline or brackish water habitats, including streams and ponds. In Namibia species are commonly found in hypersaline springs and marshes. In South Africa species are found both in saline and fresh water habitats. The widespread species *O. andronius* (Fig. 17) is found at the margins of streams and ponds and in more ephemeral aquatic habitats such as water holes and roadside pools. This species is an example of a lowland element with well-developed powers of dispersal. Two unusual species, *O. capicola* and *O. rubripes*, are only found in ocean rock pools above the high tide line, but within the splash zone (maps Figs. 29–30). The distributions of the 15 other species can be grouped into 4 principal patterns:

- 1) Restricted to the western coastal area, including Namibia and the northwestern part of South Africa, but not yet known from the cape: *O. namibiensis*, *O. sitiensis*, and *O. bupunctus* (Figs. 25, 26, 27).
- 2) Found from Namibia southward, through the cape, and west of the cape, but not including the northeastern part of South Africa: *O. endroedyi*, *O. pagotrichus*, *O. pedalis*, *O. spatulus*, and *O. spinasus* (Figs. 18, 19, 22, 23, 24).
- 3) Restricted to the cape: *O. extremus*, *O. granulinus*, *O. involatus* (Figs. 20, 28).
- 4) Present in the cape, and northward up the east coast to Mozambique: *O. salinarius* (Fig. 21).

Methods and conventions

The GeoNet Names Server of the National Geospatial-Intelligence Agency (<http://gnswww.nima.mil/geonames/GNS/index.jsp>) and the Alexandria Digital Library Gazetteer Server (<http://www.alexandria.ucsb.edu/>) were used to find coordinates for some localities. Many specimen labels have coordinates, but whether or not these were derived at the site or were obtained later from gazetteers, perhaps during the labeling process, is problematic. Coordinates given in the locality data were used to plot the distribution maps, and should be viewed as an aid to, and not as always having more precision than, the verbal locality description. This is especially true for montane localities, where small differences in coordinates can equate to large differences in altitude and topography. Locality records given herein are, with a few exceptions for clarity, as they appear on specimen labels. Label data given for primary